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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09 920,687

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Douglas P. Mortenson

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04 04 2003

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EXAMINER

TURNER, SAMUEL A

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 04 04 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/920,687

Applicant(s)

MORTENSON, DOUGLAS P.

Examiner

Samuel A. Turner

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

The title of the invention is not descriptive. A new title is required that is clearly indicative of the **invention** to which the claims are directed.

Rejections Under 35 U.S.C. § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6 and 13-20 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification never refers to any "birefringent pattern" as claimed in claims 6 and 13. What is this "birefringent pattern" and how is this pattern formed in the ring laser gyro ?

In the specification two different masks are disclosed: first is a readout detector mask which takes the form of a grid pattern and is used to block part of the interference fringes formed by the ring laser gyro, the second is an LIM detector mask which blocks all but the desired intensity mode, in this case the TEM_{00} mode. Nowhere in the specification is a mask, which is a spatial filter, disclosed which

excludes certain wavelengths, normally done by a spectral filter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, and 11-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6 there is no antecedent basis for "the parallel lines". Claim 6 must end in a period otherwise the subject matter of the claim is confusing because something appears to be missing.

Claims 6 and 14 refer to a birefringent pattern. In a ring laser gyro an interference pattern is formed on the split detectors, thus a reference to a birefringent pattern is confusing.

Claims 11 and 12 are confusing in that they are method claims which depend from apparatus claim 6 and thus would not further limit the claimed invention. These claims will be treated in the rejection as being from method claim 7.

Claim 13 is confusing in that it refers to wavelengths and not modes or fringe patterns.

Claim Rejections Under 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

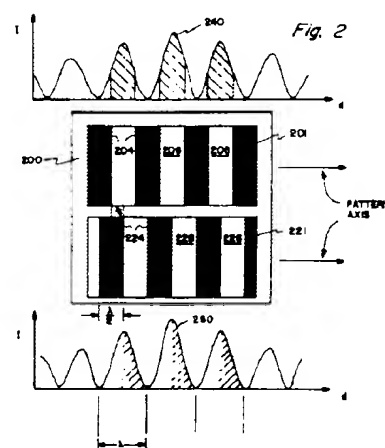
A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-9, 11, and 13-20 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Killpatrick(EP 0201853).

Killpatrick teaches a readout dual photodetector for the output of a ring laser gyro comprising two spatially separated photodetectors(200,221) each photodetector is masked with a periodic pattern formed integral to the photodetector meeting the limitations of claims 1, 7, and 13. It has been held that the term "integral" is sufficiently broad to

embrace constructions united by such means as fastening and welding. *In re Hotte*, 177 USPQ 326, 328 (CCPA 1973). The two different masks are periodic parallel bars(204,224), the width of the bars is at one half the fringe spacing, and the bars are out of phase with each other, the figure shows $\lambda/4$ however the teaching includes $\lambda/2$ meeting the limitations of claims 2, 3, 6, 8, 9, 11, and 14-20. See figure 2.



Claim Rejections Under 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

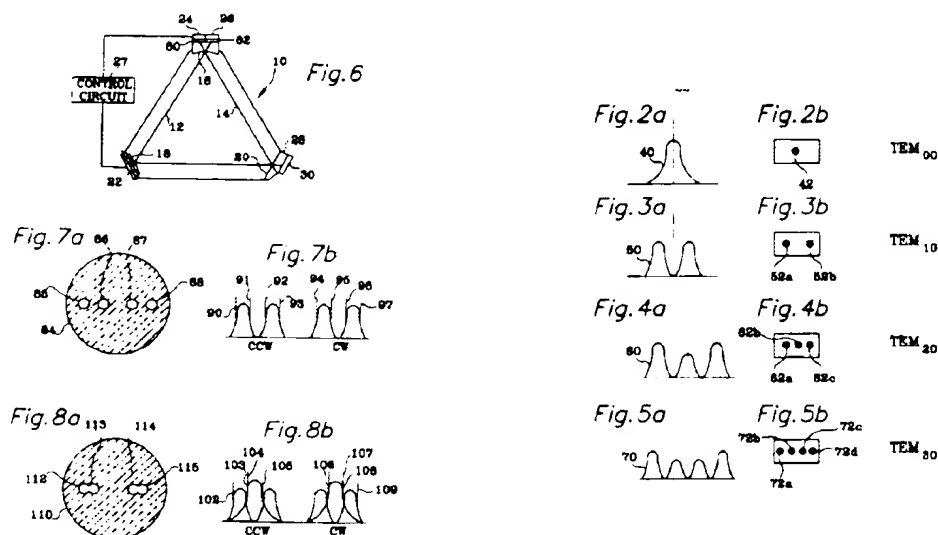
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Killpatrick(EP 0201853).

Killpatrick teaches that the mask can be manufactured by a variety of techniques by using a material which permits only the unmasked areas of the detector to be responsive to the interference fringes, however a blue chrome material is not disclosed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any material which meets the teaching of Killpatrick which is a material which permits only the unmasked areas of the detector to be responsive to the interference fringes. Clearly chrome was, at the time of invention, an opaque material which would have blocked the light from the interference fringes.

Claims 1, 4, 5, 7, 11, and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Killpatrick et al(5,663,792).



Killpatrick et al teach an intensity detector for a ring laser gyro comprising two photodetectors(24, 26), and a mode mask(80,82). See column 5, lines 3-8. The mask(84) of figure 7a teaches a spatial filter for the TEM₁₀ mode while the mask(110) of figure 8a teaches a spatial filter for the TEM₀₀ and the TEM₁₀. However when the TEM₀₀ mode is desired then a spatial filter with holes defined by figure 2b would have been used for each mask(80,82). A single mask would have had two holes for the TEM₀₀ mode. Note taught is an integral detector/mask combination.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the detectors and mask together. It has been held that forming in one piece an article which has formerly been formed in two pieces

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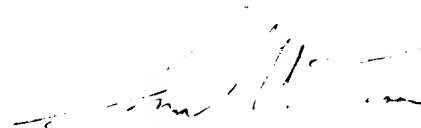
and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Turner whose telephone number is **(703) 308-4803**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font, can be reached on (703) 308-4881.

The fax phone number for this Group is (703) 308-7722. The faxing of papers related to this application must conform with the notice published in the Official Gazette, 1096 O.G. 30 (15 November 1989). The Group receptionist telephone number is (703) 308-0956.

Any inquiry of a technical nature regarding reissues, petitions, and terminal disclaimers should be directed to Ed Glick whose telephone number is (703) 308-4858, Hien Phan whose telephone number is (703) 308-7502, or Ed Westin whose telephone number is (703) 308-4823.

Any other inquiry of a technical nature, and all inquiries of a general nature including those relating to the status of this application or any patent term adjustment should be directed to TC2800 Customer Service Office whose telephone number is (703) 306-3329.



Samuel A. Turner
Primary Examiner
Art Unit 2877

SAT
April 1, 2003